



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/408,972	09/29/1999	MARTIN M. DENEROFF	499.038US1	4705

21186 7590 01/23/2004

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. BOX 2938
MINNEAPOLIS, MN 55402

EXAMINER

MEONSKE, TONIA L

ART UNIT	PAPER NUMBER
----------	--------------

2183

DATE MAILED: 01/23/2004

15

Please find below and/or attached an Office communication concerning this application or proceeding.

Sc

Office Action Summary

Application No.

09/408,972

Applicant(s)

MARTIN M DENEROFF ET AL.

Examiner

Tonia L Meonske

Art Unit

2183

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5 is/are allowed.
- 6) ☒ Claim(s) 6-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 September 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 6 and 7 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kumar, et al., “Extended Hypercube: A Heirarchical Interconnection Network of Hypercubes” (Herein after referred to as “Kumar”), cited as a prior art reference in paper number 9, mailed on November 15, 2002.
4. Referring to claim 6, Kumar has taught a massively parallel processing system comprising:
 - a. a plurality of processors (Figure 3, processing element nodes 0000...0004, ..., 0440,...0444);
 - b. a first set of routers for interconnecting the plurality of processors as two-dimensional hypercubes (Figure 3, nodes 0 and 00-04); and
 - c. a second set of routers for interconnecting the first set of routers (Figure 3, nodes 000...004, ..., 040,...044) wherein the hypercubes remain intact as the system is expanded (Page 45, right hand column, last paragraph, page 46, section II. Entitled “The

Art Unit: 2183

Extended Hypercube”) and wherein less than all of the routers in the second set of routers are coupled to a router in the first set of routers (Figure 3, Node 0 is not coupled to the first level routers.).

5. Referring to claim 7, Kumar has taught a scalable multiprocessor network for connecting a plurality of processing element nodes (Figure 3, Page 45, right hand column, last paragraph), the scalable multiprocessor network comprising:

- a. a first set of routers for interconnecting a plurality of processing element nodes as n-dimensional hypercubes (Figure 3, nodes 0 and 00-04, page 46, section II. Entitled “The Extended Hypercube”); and
- b. a second set of router for interconnecting the first set of routers (Figure 3, nodes 000...004, ..., 040,...044) wherein the n-dimensional hypercubes remain intact as additional processing element nodes are added to the multiprocessor network (Page 45, right hand column, last paragraph, page 46, section II. Entitled “The Extended Hypercube”) and wherein less than all of the routers in the second set of routers are coupled to a router in the first set of routers (Figure 3, Node 0 is not coupled to the first level routers.).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2183

7. Claims 8-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumar et al., "Extended Hypercube: A Heirarchical Interconnection Network of Hypercubes" (Herein after referred to as "Kumar".), cited as a prior art reference in paper number 9, mailed on November 15, 2002.

8. Referring to claims 8-20, Kumar has taught the network of claim 7, as described above. Furthermore, each of the claims merely recites a range of the number of processing nodes that the scalable multiprocessor network connects. As shown in *In re Rose*, 105 USPQ 237 (CCPA 1955) changing the size/range of the prior art is generally not given patentable weight. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the scalable multiprocessor, as taught by Kumar, connect any number of processing element nodes, as it has been held that changing the size/range of the prior art is generally not given patentable weight.

Response to Arguments

9. Applicant's arguments, see paper number 19, filed December 23, 2003, with respect to the rejection(s) of claim(s) 1-5 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

10. Applicant's arguments with respect to claims 6-20 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

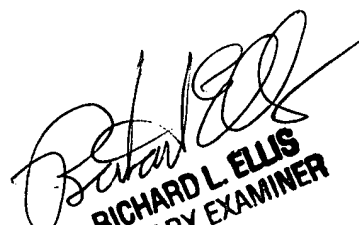
11. Claims 1-5 are allowed.

Conclusion

Art Unit: 2183

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tonia L Meonske whose telephone number is (703) 305-3993. The examiner can normally be reached on Monday-Friday, 9-6:30, with every other Friday off.
13. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie P Chan can be reached on (703) 305-9712. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.
14. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

tlm


RICHARD L. ELLIS
PRIMARY EXAMINER